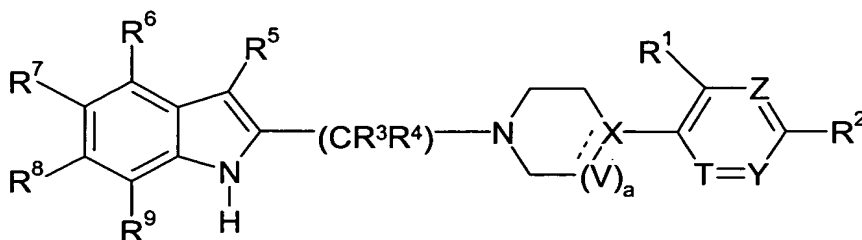


# **Claims**

1. A compound of the formula



or the pharmaceutically acceptable salt thereof, wherein the broken line represents an optional double bond;

a is 0 or 1, wherein when a is 0, X may form an optional double bond with the carbon adjacent to V;

V is  $\text{CHR}^{10}$  wherein  $\text{R}^{10}$  is hydrogen or  $(\text{C}_1\text{-C}_6)\text{alkyl}$ ;

T is nitrogen or CH;

- 10 X is nitrogen or  $\text{CR}^{11}$  wherein  $\text{R}^{11}$  is hydrogen,  $(\text{C}_1\text{-C}_6)\text{alkyl}$ ,  $(\text{C}_1\text{-C}_6)\text{alkoxy}$ , hydroxy or cyano;

Y and Z are each independently nitrogen or  $\text{CR}^{12}$  wherein  $\text{R}^{12}$  is hydrogen, chloro, bromo, trifluoromethyl, trifluoromethoxy, cyano,  $(\text{C}_1\text{-C}_6)\text{alkoxy}$  or  $(\text{C}_1\text{-C}_6)\text{alkyl}$ ;

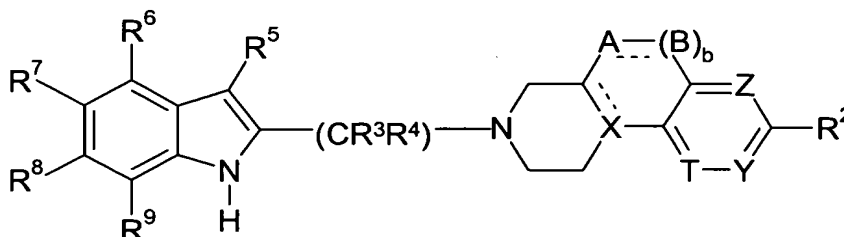
- 15  $\text{R}^1$  is hydrogen, fluoro, chloro, bromo, trifluoromethyl, trifluoromethoxy, cyano or  $(\text{C}_1\text{-C}_6)\text{alkyl}$ ;

$\text{R}^2$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$  and  $\text{R}^9$  are each independently selected from hydrogen, fluoro, chloro, bromo, trifluoromethyl, trifluoromethoxy, cyano,  $(\text{C}_1\text{-C}_6)\text{alkoxy}$  and  $(\text{C}_1\text{-C}_6)\text{alkyl}$ ;

$\text{R}^3$  and  $\text{R}^4$  are each independently hydrogen or  $(\text{C}_1\text{-C}_6)\text{alkyl}$ ; and

- 20  $\text{R}^5$  is hydrogen,  $(\text{C}_1\text{-C}_6)\text{alkoxy}$ , trifluoromethyl, cyano,  $(\text{C}_1\text{-C}_6)\text{alkyl}$  or  $\text{R}^{13}\text{CO-}$  wherein  $\text{R}^{13}$  is amino,  $(\text{C}_1\text{-C}_6)\text{alkylamino}$ ,  $((\text{C}_1\text{-C}_6)\text{alkyl})_2\text{amino}$ ,  $(\text{C}_1\text{-C}_6)\text{alkyl}$ ,  $(\text{C}_6\text{-C}_{10})\text{aryl}$ ;

or when a is 1,  $\text{R}^1$  and  $\text{R}^{10}$  may be taken together with the carbons to which they are attached to form a compound of the formula



wherein the broken lines represent optional bonds;

- 25 T, X, Y, Z,  $\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$  and  $\text{R}^9$  are defined as above;

b is 0 or 1; and

A and B are each independently CH,  $\text{CH}_2$ , oxygen, sulfur, NH or nitrogen;

with the proviso that when X is nitrogen, the optional double bond between X and V does not exist;

with the proviso that when b is 0, the optional double bond between A and B does not exist; and

5 with the proviso that when b is 1, A and B cannot both be oxygen or sulfur.

2. A compound according to claim 1, wherein X is nitrogen.

3. A compound according to claim 1, wherein Y and Z are each CR<sup>12</sup> wherein R<sup>12</sup> is hydrogen or fluoro.

4. A compound according to claim 1, wherein R<sup>2</sup> is hydrogen, fluoro or chloro.

10 5. A compound according to claim 1, wherein R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are hydrogen.

6. A compound according to claim 1, wherein R<sup>7</sup> is fluoro or chloro.

7. A compound according to claim 1, wherein R<sup>9</sup> is fluoro, chloro, bromo or alkoxy.

8. A compound according to claim 1, wherein X is nitrogen; Y and Z are each CR<sup>12</sup> wherein R<sup>12</sup> is hydrogen or fluoro; R<sup>2</sup> is hydrogen fluoro or chloro; R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are hydrogen; R<sup>7</sup> is fluoro or chloro; and R<sup>7</sup> is fluoro, chloro, bromo or alkoxy.

9. A compound according to claim 1, wherein said compound is selected from the group consisting of :

2-[4-(3-Trifluoromethyl-phenyl)-piperazin-1-ylmethyl]-1H-indole;

20 5-Fluoro-2-[4-(3-trifluoromethyl-phenyl)-piperazin-1-ylmethyl]-1H-indole;

5-Fluoro-2-[4-(4-fluoro-phenyl)-piperazin-1-ylmethyl]-1H-indole;

5-Fluoro-2-[4-(4-fluoro-phenyl)-piperazin-1-ylmethyl]-1H-indole;

5-Fluoro-2-(4-pyridin-2-yl-piperazin-1-ylmethyl)-1H-indole;

2-[4-(6-Chloro-pyridazin-3-yl)-piperazin-1-ylmethyl]-5-fluoro-1H-indole;

25 5-Fluoro-2-(4-[5'-fluoro]pyridin-2-yl-piperazin-1-ylmethyl)-1H-indole;

2-(4-pyridin-2-yl-piperazin-1-ylmethyl)-1H-azaindole;

5-Fluoro-2-(4-pyridin-2-yl-piperazin-1-ylmethyl)-1H-azaindole; and

2-[4-(4-fluoro-phenyl)-piperazin-1-ylmethyl]-1H-azaindole.

10. A method for treating a disorder of the dopamine system in a mammal, comprising administering to said mammal an amount of a D4 dopamine receptor selective compound according to claim 1, or a pharmaceutically acceptable salt thereof, that is effective in treating such disorder.

11. A method according to claim 10, wherein disorders of the dopamine system include psychotic disorders, movement disorders, gastrointestinal disorders, chemical abuse, chemical dependencies, substance abuse, vascular and cardiovascular disorders, ocular disorders and sleep disorders.

12. A method for treating a disorder of the dopamine system in a mammal, comprising administering to said mammal an amount of a D4 dopamine receptor selective compound according to claim 1, or a pharmaceutically acceptable salt thereof, in conjunction with one or more D1, D2, D3 or D5 dopamine receptor agonists, that is effective in treating such disorder.

13. A method according to claim 12, wherein disorders of the dopamine system include psychotic disorders, movement disorders, gastrointestinal disorders, chemical abuse, chemical dependencies, substance abuse, vascular and cardiovascular disorders, ocular disorders and sleep disorders.

14. A method according to claim 11, wherein psychotic disorders include affective psychosis, schizophrenia, and schizoaffective disorders.

15. A method according to claim 11, wherein movement disorders include extrapyramidal side effects from neuroleptic agents, neuroleptic malignant syndrome, tardive dyskinesia, Gilles De La Tourette's syndrome, Parkinson's disease or Huntington's disease.

16. A method according to claim 11, wherein gastrointestinal disorders include gastric acid secretion or emesis.

17. A method according to claim 11, wherein vascular and cardiovascular disorders include congestive heart failure and hypertension.

18. A pharmaceutical composition for treating a disorder of the dopamine system in a mammal, comprising administering to said mammal an amount of a D4 dopamine receptor selective compound according to claim 1, or a pharmaceutically acceptable salt thereof, that is effective in treating such disorder.

19. A pharmaceutical composition according to claim 18, wherein disorders of the dopamine system include psychotic disorders, movement disorders, gastrointestinal disorders, chemical abuse, chemical dependencies, substance abuse, vascular and cardiovascular disorders, ocular disorders and sleep disorders.

20. A pharmaceutical composition for treating a disorder of the dopamine system in a mammal, comprising administering to said mammal an amount of a D4 dopamine receptor selective compound according to claim 1, or a pharmaceutically acceptable salt thereof, in conjunction with one or more D1, D2, D3 or D5 dopamine receptor agonists, that is effective in treating such disorder.

21. A pharmaceutical composition according to claim 20, wherein disorders of the dopamine system include psychotic disorders, movement disorders, gastrointestinal disorders, chemical abuse, chemical dependencies, substance abuse, vascular and cardiovascular disorders, ocular disorders and sleep disorders.